

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

**NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY**

(PCT Rule 71.1)

To:

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Date of mailing
(day/month/year)

16.12.2005

Applicant's or agent's file reference
MDX,007-PCT

IMPORTANT NOTIFICATION

International application No.
PCT/GB2004/050027

International filing date (day/month/year)
18.11.2004

Priority date (day/month/year)
19.11.2003

Applicant
MIDDLESEX SILVER CO. LIMITED

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international
preliminary examining authority:



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PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

| | | | |
|--|--|---|---------------------|
| Applicant's or agent's file reference MDX,007-PCT | | FOR FURTHER ACTION | See Form PCT/PEAA16 |
| International application No. PCT/GB2004/050027 | International filing date (day/month/year) 18.11.2004 | Priority date (day/month/year) 19.11.2003 | |
| International Patent Classification (IPC) or national classification and IPC B23K35/30, C22C5/06 | | | |
| Applicant MIDDLESEX SILVER CO. LIMITED | | | |
| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of sheets, as follows: (1)</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> | | | |
| <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p> | | | |
| Date of submission of the demand 17.05.2005 | | Date of completion of this report 16.12.2005 | |
| Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016 | | Authorized Officer Rischard, M Telephone No. +31 70 340-4776  | |

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY****Box No. I Basis of the report**

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

1-22 as originally filed

Claims, Numbers

1-7 received on 18.07.2005 with letter of 14.07.2005

Drawings, Sheets

1 as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB2004/050027

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|-----|
| Novelty (N) | Yes: Claims | 1-7 |
| | No: Claims | |
| Inventive step (IS) | Yes: Claims | 1-7 |
| | No: Claims | |
| Industrial applicability (IA) | Yes: Claims | 1-7 |
| | No: Claims | |

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

Reference is made to the following document:

D3: US-A-4 242 134 (D'SILVA, THOMAS L) 30 December 1980 (1980-12-30)

Amendment of the claims:

The amendments filed with the International Bureau under Article 19(1) introduce subject-matter which extends beyond the content of the application as filed, contrary to Article 19(2) PCT:

The expression "said solder being a colour match for Sterling Silver" (claims 1 and 5) introduces subject-matter which is not disclosed in the application as filed. For the purpose of the following report, this expression has not been considered.

Novelty:

1. A silver brazing alloy with a composition Ag: 65%, Cu: 20%, Zn: 15% (e.g. SILVALOY EASY, Woldman's Engineering alloys) and a method for brazing silver with this alloy is known.

Claim 1 differs from the above by the method using an alloy which additionally contains germanium, which affects the colour, reduces the melting point and increases the corrosion resistance. Claim 1 is therefore new in view of this document.

2. Claim 5 differs from the SILVALOY EASY by a germanium content of 0.5-3%. Claim 5 is therefore also new in view of this alloy.

3. Document D3 discloses a silver brazing alloy of the Ag-Cu-Zn family containing 56.5% Ag, 20% Cu, 13.5% Zn and 10% Ge [col.2, l.14]. Claim 5 differs from this document by a lower germanium content, leading to a closer colour match with Argentium silver. Claim 5 is therefore also new in view of document D3.

Inventive step:

1. Claim 1, respectively claim 5 differ from the known alloy by the addition of germanium, which affects the colour, reduces the melting point and increases the corrosion resistance.

The objective technical problem to be solved by the present invention is therefore to provide an alternative method for brazing or soldering silver and the soldering alloy therefor, the solder having a good colour match with Argentium silver, high corrosion resistance and low melting point.

Notwithstanding the objection under VII. and VIII. , the solution to this problem proposed in claims 1 and 5 appears to involve an inventive step (Article 33(3) PCT) for the following reasons:

The addition of germanium to a brazing alloy of the Ag-Cu-Zn family is known in the technical field, for the purpose of reducing the melting point, enhancing the wettability and the corrosion resistance. However, there is no indication in the prior art which would have lead the skilled person to add germanium in a lower amount in order to achieve a solder which presents additionally a good colour match to Argentium silver.

2. Claims 2 to 4 and 6 to 7 are dependent on claims 1 and 5 respectively and therefore also fulfill the requirements of the PCT concerning novelty and inventive step.

Re Item VII

Certain defects in the international application

The amendments filed with the International Bureau under Article 19(1) introduce subject-matter which extends beyond the content of the application as filed, contrary to Article 19(2) PCT:

The expression "said solder being a colour match for Sterling Silver" (claims 1 and 5) introduces subject-matter which is not disclosed in the application as filed. For the purpose of the following report, this expression has not been considered.

Re Item VIII

Certain observations on the international application

Claims 1 and 5 are not supported by the description as required by Article 6 PCT, as their scope is broader than justified by the description and drawings. The reasons therefore are the following:

It appears from the description [p.10,11,13,16] that the inventive solder has a good colour match with Argentium silver (92.5% Ag, 6.3% Cu, 1.2% Ge). No example states a close colour match to Sterling silver (92.5% Ag, 7.5% Cu).

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CLAIMS

1AP9 Rec'd PCT/PTO

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1. A method of making a joint in Sterling silver which includes using a silver solder or brazing alloy of the Ag-Cu-Zn family containing 10-30 wt% Cu, 8-15 wt % Zn, from 0.5 - 3 wt% Ge, optionally 0.05-0.4 wt % Si, optionally 1-3 wt% Sn, optionally 1ppm-0.3 wt% B, the balance being 55-77wt%, Ag, said solder being a colour match for said Sterling silver.
2. The method of claim 1, wherein said Sterling silver is of content about Ag 92.5 wt%, Cu 6.3 wt%, Ge 1.2 wt %.
3. The method of claim 1 or 2, wherein the silver solder or brazing alloy contains 1.5-2.5 wt % Ge.
4. The method of claim 1, 2 or 3, wherein the silver or brazing alloy contains about 2 wt % Ge.
5. For use in the method of any preceding claim, a silver solder or brazing alloy of the Ag-Cu-Zn family containing 10-30 wt% Cu, 8-15 wt % Zn, from 0.5 - 3 wt% Ge, optionally 0.05-0.4 wt % Si, optionally 1-3 wt% Sn, optionally 1ppm-0.3 wt% B, the balance being 55-77wt%, Ag, said solder being a colour match for Sterling silver.
6. An alloy according to claim 5, which is in the form of rod, strip or wire.
7. An alloy according to claim 5, which is in the form of paste.